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Editorial Office
Archives of Biochemistry etc.
125 East 23 Street

New York 10, N.Y.

Gentlemen:

I will not be displeased to review manuscripts sent without prior consultation, but you run the risk, as in the present case of some delay before I can conveniently manage the review.

The present ms. (Morowitz) is short enough that the question of condensation does not seem very pressing. The technique for isolating mutants is given in full in reference 17, and perhaps need not be recited on pages 4-5. The final paragraph, page 11, is vacuous and the author could afford to omit it altogether, Most of the references cited in the first paragraph, page 1, are of doubtful immediate pertinence.

I am enclosing some additional comments directed to the author.

The paper as a whole is not below the usual standards of the journal, and contains sufficient original material to justify its acceptance. I cannot suggest another, more appropriate journal for it.

If the book has not already been assigned, I would welcome the opportunity to review Advances in Genetics, volume 5.

Yours sincerely,

Joshua Lederberg
Associate Professor of Genetics

MOROWITZ: UV etc. on B. subtilis

p.3 spores desiccated over what agent?

p.3-4 calibration of optical density assumes uniform or total viability. Was this justified?

p. 4 significant parameter is percent of mutants (not mutation) among survivors.

p. 5 Why is 2-target curve the "theoretical", deviations from which have been explained? What is the theory? Reference to Atwood or others for target theory would be appropriate.

p. 7 Confusion between function and equation, not entirely cleared up. Figure II should show log $(M/N - M_o/N_o)$, and not the natural numbers on a logarithmic scale to concord with line 7. The smooth line curve represents the function, log Bx platted against logx. The points represent log(..) plotted against log x. It would be much clearer if these functions were plotted in natural coordinates (involving only a change on the legends).

p.8 The raw data would be better replaced by means and dispersions.

Discussion pp. 9-11.

The consideration of absorption and lethal action spectra are unobjectionable. The numbers of mutants isolated are, however, so small as to leave the evaluation of mutation constants open to very severe criticism on statistical grounds. ~~If one omitted the~~ This is already obvious from the internal heterogeneity of ~~the~~ B in table 3, (This table would be much more meaningful if arranged by wavelength). ~~If~~ If one omits the high values for 2301A, it may be wondered if a proper heterogeneity test on all the remaining data would disclose any evidence for any difference whatsoever in the production of mutants as a function of wavelength, and perhaps not even as a function of dose.

It may also be questioned what is being measured by the technique used (see Davis, Experientia, 6:42; Witkin, Cold Spr. Harbor Symposium 16). Bacterial spores may possibly be free from such problems of nuclear segregation etc., but this has not been substantially proven. Were the mutants all characterized adequately to ensure thay were not contaminants?

Figure 1. Dose O on abcissa.

Table III. Where is B_{phot} (promised on p.8). Relative intensity units through are units of what?-- incident energy flux? Was phototube calibrated for wavelength?

Table I "$\pm$"-- standard deviation? The raw data need hardly be given if this is correctly presented.